

Remarks

Claims 2 and 3 are cancelled, leaving only claims 1 and 4 for the Examiner's consideration.

The present invention is characterized in that each of the narrow continuous standing gaps (46) formed by cutting the opposite edges of the respective skirt parts (39) comprises a pair of upper and lower teeth (44, 45) opposed to each other, and one of a plurality of parallel air passage portions formed between the respective adjacent pairs of teeth. A plurality of ports (47) respectively formed on opposite sides of the narrow continuous standing gaps are connected to a vacuum tank (61) having a vacuum pump (60) as a vacuum source thereof, via a sub-vacuum line (49). The first opening and closing valve (62) in the sub-vacuum line (49) is opened to separate apart the upper and lower faces of the cut portion of the tube film (20) along the parallel air passage portions comprising the narrow continuous gaps (46) by means of a vacuum suction force acting on the sub-vacuum line (49). The second opening and closing valve (64) in the main vacuum line (63) opens slightly after the opening of the first valve (62).

With the foregoing configuration, when the upper and lower faces of the cut portion of the tube film (20) are sucked with the suction force of the plurality of ports (47), the bag mouth is caused to be formed with intermittent uneven holes for evacuating air therefrom by the teeth (44, 45) (see Fig. 4), whereby the rigidity of the bag mouth is strengthened. By this, even if the pressure difference between the inside and the outside of the bag becomes small, the bag mouth is difficult to close and therefore evacuation of air from the main vacuum line (63) is maintained.

Sonneborn '812 discloses channels 41, 42 which correspond to the ports 47 of the present invention (Fig. 7). However, Sonneborn states that "the die member 39 and the member 11A are provided with channels 41, 42 of annular or other suitable shape each connected as a by a hose-pipe 43 to a suction pump," (page 3, left column, lines 25-29). Judging from this description, there exist no teeth 44, 45 of the present invention in Sonneborn. Further, it is apparent from Figs. 7 and 8 that there is nothing corresponding to the teeth 44, 45 of the present invention in member 11A which contacts the channels 41, 42. With such channels 41, 42 as of Sonneborn, when a wide tube film is extended, the tube film may distort and form a large wrinkle. Therefore, after the film is sealed, an air hole/holes are formed in the sealed portion

and spoil the air tightness. Contrary to this, the teeth 44, 45 of the present invention can prevent the occurrence of wrinkles in sealed portions.

The Examiner states in the last paragraph in page 3 as follows: "However, Mugnai '224 shows narrow continuous standing gaps the narrow continuous standing gaps comprising pairs of upper and lower teeth 24 opposing to each other as seen in Figure 2A for the purpose of having a wrinkle free seal upon sealing and also to allow further escape of air as in column 4, lines 40-55."

However, in Mugnai '224 the upper and lower teeth 24 have no parallel air passage ports comprising a plurality of gaps 46 and no plurality of ports 47 as in the present invention. Mugnai '224 describes at column 3, lines 26-33 as follows: "When the chamber is closed, the neck of the bag is gripped at various spaced zones by engagement with two sets of undulating clamping bars 23 and 24 (FIG. 2A) which each have engaging peaks 25, 26 to clamp the bag neck and spaced apart troughs 27, 28 to leave constricted air extraction passageways in the bag neck. Fig. 2B shows the clamping bag 23, 24 in their closed configuration."

Mugnai '224 further states at column 4, lines 42-44 that "during the heat-shrinking step, the bag is clamped at spaced regions defined by the various peaks 26, 27 of the clamping bag 23, 24 (as shown in Fig. 2B)."

These patents disclose nothing about sucking air from a bag mouth by means of a plurality of ports 47 formed at the gaps 46 of the present invention. Therefore, air can hardly be evacuated from a bag clamped by undulating peaks 25, 26, and uneven holes can hardly be formed in a film such as that depicted in Mugnai's Fig. 2B. Such uneven holes are formed only when "the pressure inside the bag reduces more slowly than the chamber pressure outside the bag and the bag 4 balloons away from the product 21" as described in Mugnai at column 3, lines 61-63.

Further, the Office Action states in page 4, lines 16-18, as follows: "With respect to claim 3, Sonneborn inherently shows timed valve operation for suction for the purpose of applying suction when desired according to the flow of product as in page 3, line 32." The Office Action states much the same concerning Mugnai '159 in page 7 line 10 and onward. However, Sonneborn '159 states on page 3, left column, lines 32-36 that "Valves, not shown, control supply of suction to the pipes 12, 43 in timed relation to reciprocation of feeding structure F." Therefore, neither Sonneborn '812 nor Mugnai '159 discloses the features of the claimed invention recited in claim 1 (b) and (c).

As mentioned above, the present invention cannot be easily derived even if Mugnai '224, Mugnai '159 and Sonneborn '812 are combined.

Claim 4 depends from claim 1 and is believed to be allowable along with claim 1. The provision of a cooling drain passage in the attached blocks, especially an apparatus having the two valves operable as claimed, is neither shown nor suggested in the prior art.

A one month extension of time to respond to the action of July 15, 2004, is requested and a check in the amount of \$55.00 is enclosed to cover the cost of the extension. The Commissioner is hereby authorized to charge any additional fees to our Deposit Account No. 50-0852. A duplicate copy of this sheet is enclosed.


Respectfully submitted,

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on **November 8, 2004**.


Noelle Constantinou

REISING, ETHINGTON,
BARNES, KISSELLE, P.C.


William H. Griffith, Reg. No. 16,706
P.O. Box 4390
Troy, Michigan 48099-4390
(248) 689-3500

Amendments to the Drawings

Attached is a replacement sheet of drawings showing FIGS. 1 and 4 and a replacement sheet of drawings showing FIG. 3, both such sheets labeled "Replacement Sheet". FIG. 4 has been amended by correcting the lead line for reference "46" and FIG. 3 as been amended by correcting the reference "53" to --63--. Also attached are copies of the replacement sheets labeled "Annotated Marked-Up Drawings" showing the corrections in red.



Fig. 1

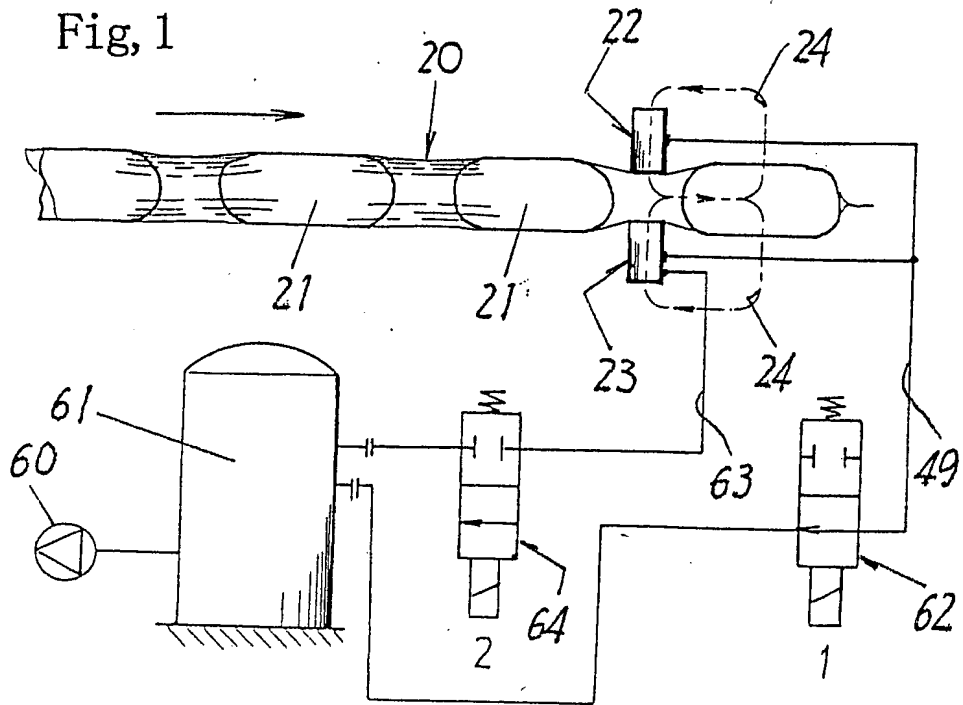
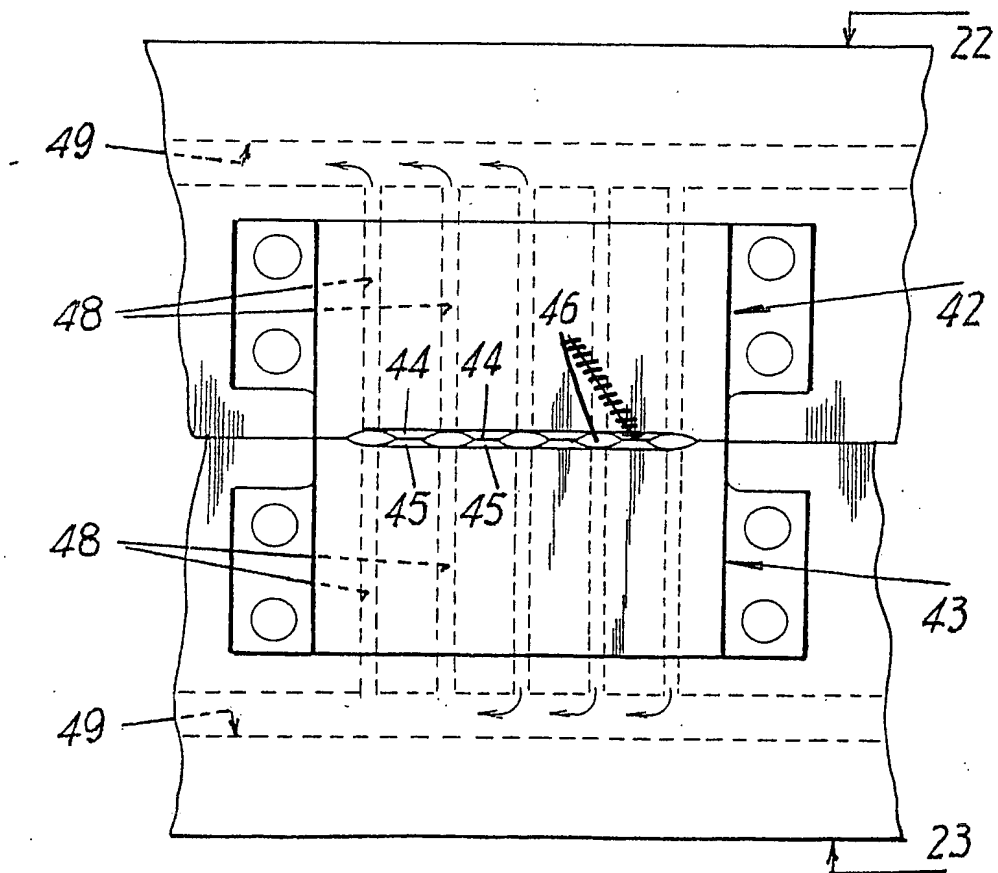


Fig. 4



Fig, 3

